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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,846	04/05/2004	Solomon Trainin	P-6407-US	3125

49444 7590 01/18/2007
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EXAMINER

DANG, KHANH

ART UNIT	PAPER NUMBER
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2111

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/816,846

Applicant(s)

TRAININ, SOLOMON

Examiner

Khanh Dang

Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-15,19-23,25,26,28-31 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) 6-15, 19-22, 29-31, and 35-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3-5,23,25,26 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicants

This application, previously been assigned to and examined by Ex. Justin King, is now assigned to Ex. Dang. Any future communication should be directed to Ex. Khanh Dang whose contact information is provided at the end of this Office Action.

Claim Rejections - 35 USC § 112

Claims 1, 3-5, 23, 25, 26 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 26 and 28 are directed to an apparatus. However, the essential structural cooperative relationship(s) between the "dipole antenna," "state machine," and other recited elements in the claims have been omitted, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

MPEP 2172.01 requires that relationships between elements recited in the claims must be specified. Specifically, MPEP 2172.02 requires interrelation and structural relationships between essential elements in the claims. Therefore, it is the Examiner's position that the claimed elements, as defined in the originally filed specification and as identified above, are essential elements to the claimed invention. Since they are essential elements as defined in the originally filed specification, their structural

cooperative relationships must be provided in the claims. Further, it is also the Examiner's position that the claimed elements, as identified above, function simultaneously, are directly functionally related, directly inter-cooperate, and/or serve independent purposes, as evidenced from the originally filed specification.

If Applicants disagree with the Examiner that the above identified elements, as defined by the originally filed specification, are essential elements to the claimed invention, and that the above identified elements are directly functionally related, directly inter-cooperate, and/or serve independent purposes, it is requested that Applicants provide evidences showing that the identified elements are not essential elements to the claimed invention, do not function simultaneously, are not directly functionally related, do not directly inter-cooperate, and/or do not serve independent purposes; and state on the record that this is the case.

In claims 1, 23, and 26, the phrase "the slot timer of a wireless link synchronization unit" is unclear in view of the originally filed specification. As disclosed, "a timer such as, for example, a wireless link synchronization unit such as, for example, a slot timer 22 may signal the expiration of a slot or other interval. In some embodiments such timer may be a unit that synchronizes frames sequences or other functions of wireless devices. Other timers may be used." It is clear that the timer and the wireless link synchronization unit are the same device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

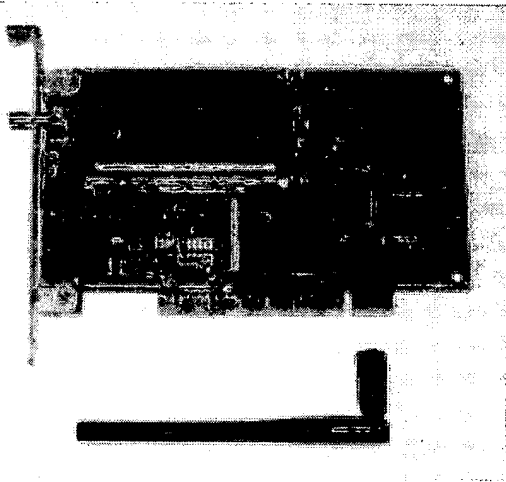
Claims 1, 3-5, 23, 25, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan et al. (Ramakrishnan, 5,404,536) in view of the Wi-Fi standard (IEEE 802.11) generally defined by Wikipedia.

With regard to claim 1, Ramakrishnan discloses a method comprising synchronizing interrupts of a processor with signals from a link synchronization unit connected to said processor. Specifically, in Ramakrishnan, the timer is used to provide time slots or intervals for the interrupts to occur or in another word, the timer is used for synchronizing interrupts of the processor. See at least column 1, line 54 to column 2, line 2; column 5, line 40 to column 7, line 10. Further, in Ramakrishnan, during the

execution by the processor of a scheduled time-dependent function, processor interrupts are prohibited. Specifically, depending from the time interval set forth by the timer during which, transmit or receiving packets are processed by the processor, or depending from whether the task is a processing task that needs to be completed in a timely manner or a background tasks that need to be performed, interrupts are prohibited until expiration of the set time interval. See at least column 1, lines 26-33; column 2, line 64 to column 3, line 68; column 4, line 38 to column 6, line 61; and the abstract.

Ramakrishnan does not disclose that the network adapter NIC 10 is a wireless network adapter (for wireless device, for example) to provide wireless connection to the network.

However, the use of wireless NIC is old and well-known in the art as evidenced by the protocol defined by IEEE 802.11, the definition of which is provided by Wikipedia. **IEEE 802.11**, the Wi-Fi standard, denotes a set of Wireless LAN/WLAN standards developed by working group 11 of the IEEE LAN/MAN Standards Committee (IEEE 802). The term 802.11x is also used to denote this set of standards and is not to be mistaken for any one of its elements. There is no single 802.11x standard. The term *IEEE 802.11* is also used to refer to the original 802.11, which is now sometimes called "802.11legacy." The following is a typical wireless NIC PCI card:



The 802.11 family currently includes six over-the-air modulation techniques that all use the same protocol. The most popular (and prolific) techniques are those defined by the b, a, and g amendments to the original standard; security was originally included and was later enhanced via the 802.11i amendment. 802.11n is another modulation technique that has recently been developed; the standard is still under development, although products designed based on draft versions of the standard are being sold. Other standards in the family (c-f, h, j) are service enhancements and extensions or corrections to previous specifications. 802.11b was the first widely accepted wireless networking standard, followed (somewhat counterintuitively) by 802.11a and 802.11g.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the NIC of Ramakrishnan as a wireless NIC, as taught by the IEEE 802.11, for the purpose of providing wireless connectivity to the network. Note that once the NIC of Ramakrishnan is wireless, it is clear that the timer can be called wireless timer.

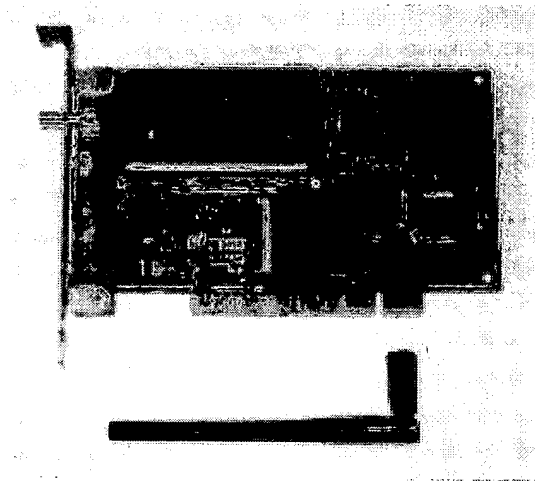
With regard to claim 3, it is clear that scheduling interrupts of said processor in advance of slot signals issued by said wireless link synchronization unit (as discussed above, interrupts for time-sensitive task or background task are scheduled in advance of the timer interrupt signals issued by the timer).

With regard to claim 4, it is clear from discussion above that a function or task that is time sensitive such as transmitting packets or receiving packets comprising a plurality of packets defining segments wherein the transmitting or receiving packets are received by the NIC and completed by the processor within a set time interval.

With regard to claim 5, as discussed above, the background function comprises a plurality of background tasks defining segments or in another word, the background function can be divided into a plurality of background tasks or segments.

With regard to claims 23 and 25, see discussion above, since the subject matter presented in claims 23 and 25 has already been discussed.

With regard to claim 26, see discussion above, since the subject matter presented in claims 23 and 25 has already been discussed. Further, as shown in the drawing above, the wireless NIC includes a dipole antenna.



With regard to claim 28, "if any background work is pending, or if any interrupts are pending (block 60), processing continues in block 48, i.e. the backoff timer is set, context registers are restored, and return is made to background or interrupt processing" (column 6, lines 21-26). Thus, it is clear that the in Ramakrishnan, a register is used to store an indication of a background function waiting to be processed.

Response to Arguments

Applicant's arguments with respect to claims 1, 23, and 26 have been considered but are moot in view of the new ground(s) of rejection.

Relevant Art

US Patent Nos. 6,629,180 to Attimont et al., 6,816,935 to Gulick, 6,023,740 to Korhonen, 6,990,665 to Ballantyne, 6,981,084 to Connor, 6,633,941 to Dunlap, 6,064,649 to Johnston, and 6,467,008 to Gentry Jr. et al. are cited as relevant art.

Non Patent Literature/Printed documents: Intel Pro/100S Desktop Adapter, Definition of Wi-Fi from Wikipedia are also cited as relevant art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dang whose telephone number is 571-272-3626. The examiner can normally be reached on Monday-Friday from 9:AM to 5:PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart, can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Khanh Dang
Primary Examiner